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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,760	03/22/2004	Paul Anthony Bristow	149101-1	1252
23413	7590	10/20/2006	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			HUSON, MONICA ANNE	
			ART UNIT	PAPER NUMBER

1732

DATE MAILED: 10/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/805,760

**Applicant(s)**

BRISTOW ET AL.

**Examiner**

Monica A. Huson

**Art Unit**

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,9-17 and 20 is/are rejected.
- 7) ☒ Claim(s) 3-5,8,18 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>080906,081006</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This office action is in response to the paper filed 9 August 2006.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Holtrop et al. (U.S. Patent 4,529,641). Regarding Claim 17, Holtrop et al., hereafter "Holtrop," show that it is known to carry out a method of forming a layered article (Abstract), the method comprising heating a substrate sheet to a temperature (Column 4, lines 59-62; It is noted heating the sheet is the positively-claimed method step, while "[allowing] lofting of fibers" is only an intended use of the heating step, and therefore, not a positively-recited method step.); disposing the substrate sheet against a pressure box (Column 4, lines 62-63); pushing the substrate sheet onto a mold to form a shaped substrate (Column 4, lines 62-63); heating a film layer (Column 4, lines 59-62); disposing the film layer adjacent to the shaped substrate (Column 4, lines 62-66); pulling a vacuum through the shaped substrate (Column 5, lines 3-5); and pulling the film layer against the shaped substrate to form the layered article (Column 5, lines 9-14).

Regarding Claim 20, Holtrop shows the process as claimed as discussed in the rejection of Claim 17 above, including a method further comprising disposing a tie-layer between the shaped substrate and the film layer (Column 4, lines 33-35).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 6-7, and 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holtrop, in view of Nagayama et al. (U.S. Patent 5,854,149). Regarding Claim 1, Holtrop shows that it is known to carry out a method of forming a layered article (Abstract), the method comprising thermoforming a substrate sheet to form a shaped substrate, wherein the shaped substrate has a void content sufficient to allow a vacuum to be applied through the shaped substrate (Column 4, lines 58-68); pulling a vacuum through the shaped substrate (Column 5, lines 3-5); and pulling a film layer onto a surface of the shaped substrate to form the layered article (Column 4, lines 51-68; Column 5, lines 3-14). Holtrop does not specifically show a fiber-reinforced plastic material. Nagayama et al., hereafter "Nagayama," show that it is known to carry out a method including thermoforming a fiber-reinforced plastic material having a void content (Column 10, lines 43-46; Column 22, lines 47-67). Nagayama and Holtrop are combinable because they are concerned with a similar technical field, namely, methods of thermoforming layered articles. It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Nagayama's fiber-reinforced plastic material as that in Holtrop's molding process in order to produce an article which satisfies certain end-use foamed-plastic reinforcement specifications.

Regarding Claim 2, Holtrop shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the film layer

further comprises a compatible layer (Column 5, lines 9-14), meeting applicant's claim.

Regarding Claim 6, Holtrop shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show using a specific fiber size. Nagayama shows that it is known to carry out a method wherein the fibers have a fiber diameter of about 6 micrometers to about 25 micrometers, and a fiber length of about 2 mm to about 75 mm (Column 12, lines 1-12). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Nagayama's fibers as reinforcements in Holtrop's foamed plastic in order to produce an article which satisfies certain end-use foamed-plastic reinforcement specifications.

Regarding Claim 7, Holtrop shows the process as claimed as discussed in the rejection of Claim 1 above, including showing a [foraminated] substrate (Column 1, lines 19-21; It is noted that foamed articles can be considered as being foraminated, i.e. having holes.), meeting applicant's claim.

Regarding Claims 9 and 10, Holtrop shows the process as claimed as discussed in the rejection of Claim 1 above, but he does not show a specific fiber and plastic composition. Nagayama shows that it is known to carry out a method wherein the substrate sheet comprises about 35 weight percent to about 75 weight percent plastic material; about 35 weight percent to about 65 weight percent fibers, wherein the weight percents are based on a total weight of the substrate sheet (Column 12, lines 15-26). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Nagayama's specific substrate sheet composition during Holtrop's forming method in order to produce an article which satisfies certain end-use foamed-plastic reinforcement specifications.

Regarding Claim 11, Holtrop shows the process as claimed as discussed in the rejection of Claim 9 above, including a method wherein the plastic material is polystyrene (Column 1, lines 62-66), meeting applicant's claim.

Regarding Claim 12, Holtrop shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the substrate sheet is thermoformed with a membrane assisted vacuum pressure forming method with plug assist (Column 5, lines 3-5), meeting applicant's claim.

Regarding Claim 13, Holtrop shows the process as claimed as discussed in the rejection of Claim 1 above, including a method further comprising disposing a tie-layer between the shaped substrate and the film layer (Column 4, lines 33-35), meeting applicant's claim.

Regarding Claim 14, Holtrop shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein thermoforming the substrate sheet further comprises heating a substrate sheet to a temperature (Column 4, lines 59-62; It is noted heating the sheet is the positively-claimed method step, while "[allowing] lofting of fibers" is only an intended use of the heating step, and therefore, not a positively-recited method step.), meeting applicant's claim.

Regarding Claim 15, Holtrop shows the process as claimed as discussed in the rejection of Claim 14 above, but he does not show heating to a temperature about 232C to about 371C. Nagayama shows that it is known to carry out a method wherein the heating temperature is 250C (Column 28, lines 57-66). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to use Nagayama's processing temperature during Holtrop's thermoforming process in order to properly process and form the specific molding material without overheating or underheating.

Regarding Claim 16, Holtrop shows the process as claimed as discussed in the rejection of Claim 1 above, including a method wherein the substrate sheet further comprises a nonwoven scrim disposed on a surface of the substrate sheet (Column 6, lines 23-26), meeting applicant's claim.

***Response to Arguments***

Applicant's arguments filed 9 August 2006 have been fully considered but they are not persuasive.

Applicant contends that Holtrop does not show the instant invention because, with respect to claim 17, Holtrop does not show a fiber-reinforced plastic material. This is not persuasive because a fiber-reinforced plastic material is not exclusively required by claim 17.

Applicant contends that Holtrop does not show the instant invention because he does not show a specific temperature to which the substrate is heated so that lofting occurs. This is not persuasive because there is no specific degree indicated in the specification, and therefore, it is maintained that lofting of fibers results from a heating step.

Applicant contends that Holtrop does not show the instant invention because he does not show a membrane assisted pressure box. This is not persuasive because Holtrop's mold is being interpreted as the membrane assisted pressure box.

Applicant contends that Holtrop does not show the instant invention because he does not show a film layer next to the substrate. This is not persuasive because any of the laminate layers can be interpreted as the film layer that is disposed between shaped substrate and the mold surface.

Applicant contends that Holtrop and Nagayama do not show the instant invention because there is no motivation to combine their teachings. This is not persuasive, as Nagayama provides motivation for including reinforcing fibers at Column 10, lines 31-35.

Applicant contends that Holtrop and Nagayama do not show the instant invention because Holtrop does not show a substrate with a compatible layer. This is not persuasive because a "compatible layer" can be interpreted broadly, and therefore Holtrop's layers which are fusible to each other meet the limitation of being compatible on at least some levels.

Applicant contends that Holtrop and Nagayama do not show the instant invention because Nagayama does not teach the claimed fiber size. This is not persuasive because Nagayama shows the claimed fiber size at Column 12, lines 1-12.

Applicant contends that Holtrop and Nagayama do not show the instant invention because Holtrop's foamed article cannot be considered foraminated. This is not persuasive because although applicant has used the word "foraminated" in the specification, there is no indication of an exclusive definition associated with the term. Therefore, it is maintained that Holtrop's foamed article can be considered foraminated in some extent.

Applicant contends that Holtrop and Nagayama do not show the instant invention because they do not show the specific void content. This is not persuasive because Holtrop and Nagayama were not cited to show the specific void content.

Applicant contends that Holtrop and Nagayama do not show the instant invention because Nagayama does not show the specific composition. This is not persuasive because the ranges disclosed by Nagayama (10-70 weight percent of fiber and 30-90 weight percent resin) meet the claimed ranges.

Applicant contends that Holtrop and Nagayama do not show the instant invention because the temperatures disclosed in Nagayama would not be expected to be useful in the process of Holtrop. This is not persuasive because, although applicant has purported that there is no expectation of success, there is no conclusive data to confirm this assertion. It is noted that arguments cannot take the place of evidence in the record (MPEP 2145).

#### ***Allowable Subject Matter***

Claims 3-5, 8, 18, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



**Conclusion**

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monica A. Huson whose telephone number is 571-272-1198. The examiner can normally be reached on Monday-Friday 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 571-272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1732

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Monica A Huson

October 16, 2006



CHRISTINA JOHNSON  
PRIMARY EXAMINER

10/18/06